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EPA R5 Geospatial Monitoring of Air Pollution (GMAP)

Questions?

For questions on the sampling technology and sampling protocols:

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EPA Region 5 has developed a Geospatial Monitoring of Air Pollution (GMAP) platform with EPA's Office of Research and Development (ORD) to implement an advanced technology that utilizes *fast-response instruments and a precise global positioning system that maps air pollution patterns around sources.* This system uses a mobile platform to measure *hydrogen sulfide (H_2S), methane (CH_4), benzene (C_6H_6), toluene (C_7H_8), ethylbenzene (C_8H_{10}), m-o-p xylene(C_8H_{10}), and ozone (O_3),* along with *meteorological parameters (wind speed, wind direction)*. By integrating these parameters with a concurrently collected *geospatial tag* from an incorporated global positioning system, the platform can be used to obtain highly sensitive ambient measurements to quantify air pollution concentrations, identify sources, and evaluate geospatial impact.

- Employ next generation mobile and stationary monitoring methods to assess fenceline and near-source concentrations
- Identify fugitive emission sources and community exposures using geospatial mapping
- Measure geographically dispersed sources and isolate processes within a facility
- Quantify emissions
- Potentially calculate emissions flux to quantify short-term emission rates (OTM-33 and OTM-33a)

Clockwise: vehicle in mobile measurement mode near source; mobile ribbon concentration plot overlaid on Google Earth image; stationary bivariate polar plot indicating source over Google Earth image; time-series